

=> d his ful

(FILE 'HOME' ENTERED AT 09:36:50 ON 11 SEP 2007)

FILE 'REGISTRY' ENTERED AT 09:36:56 ON 11 SEP 2007

L1 STRUCTURE UPLOADED
 D
L2 50 SEA SSS SAM L1
L3 43918 SEA SSS FUL L1
L4 STRUCTURE UPLOADED
 D
L5 452 SEA SUB=L3 SSS FUL L4
L6 STRUCTURE UPLOADED
L7 STRUCTURE UPLOADED
 D
L8 43237 SEA SUB=L3 SSS FUL L7
L9 681 SEA ABB=ON PLU=ON L3 NOT L8
L10 12 SEA SUB=L9 SSS FUL L4
 D QUE STA
L11 ANALYZE PLU=ON L10 1- LC : 6 TERMS
 D
 D L10 1-

FILE 'ZCAPLUS, USPATFULL, USPATOLD, USPAT2, TOXCENTER' ENTERED AT
09:47:34 ON 11 SEP 2007

L12 18 SEA ABB=ON PLU=ON L10
L13 14 DUP REM L12 (4 DUPLICATES REMOVED)
 ANSWERS '1-5' FROM FILE ZCAPLUS
 ANSWERS '6-14' FROM FILE USPATFULL

FILE 'ZCAPLUS, USPATFULL, USPATOLD, USPAT2' ENTERED AT 09:47:59 ON 11 SEP
2007

L14 14 SEA ABB=ON PLU=ON L13
 D L14 1-14 IBIB HITSTR

FILE 'REGISTRY' ENTERED AT 09:56:55 ON 11 SEP 2007

L15 STRUCTURE UPLOADED
 D
L16 0 SEA SUB=L9 SSS FUL L15
L17 STRUCTURE UPLOADED
L18 0 SEA SUB=L9 SSS FUL L17
L19 STRUCTURE UPLOADED
 D
L20 0 SEA SUB=L9 SSS FUL L19

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 10 SEP 2007 HIGHEST RN 946567-47-1
DICTIONARY FILE UPDATES: 10 SEP 2007 HIGHEST RN 946567-47-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

FILE ZCAPLUS

FILE COVERS 1907 - 11 Sep 2007 VOL 147 ISS 12

FILE LAST UPDATED: 10 Sep 2007 (20070910/ED)

FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 11 Sep 2007 (20070911/PD)

FILE LAST UPDATED: 11 Sep 2007 (20070911/ED)

CA INDEXING IS CURRENT THROUGH 11 Sep 2007 (20070911/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 11 Sep 2007 (20070911/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2007

FILE USPATOLD

FILE COVERS U.S. PATENTS 1790-1975

FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 11 Sep 2007 (20070911/PD)

FILE LAST UPDATED: 11 Sep 2007 (20070911/ED)

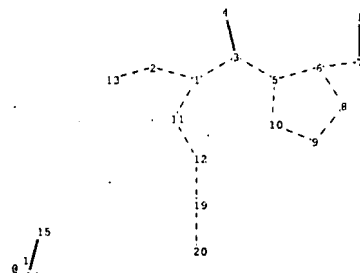
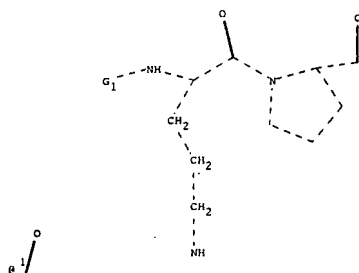
CA INDEXING IS CURRENT THROUGH 11 Sep 2007 (20070911/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 11 Sep 2007 (20070911/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2007

FILE TOXCENTER

FILE COVERS 1907 TO 11 Sep 2007 (20070911/ED)



```

chain nodes :
  1  2  3  4  7  11  12  13  14  15  18  19  20
ring nodes :
  5  6  8  9  10
chain bonds :
  1-2  1-3  1-11  2-13  3-4  3-5  6-7  7-18  11-12  12-19  14-15  19-20
ring bonds :
  5-6  5-10  6-8  8-9  9-10
exact/norm bonds :
  1-2  1-3  1-11  2-13  3-4  3-5  5-6  5-10  6-7  6-8  7-18  8-9  9-10  11-12
  12-19  14-15  19-20

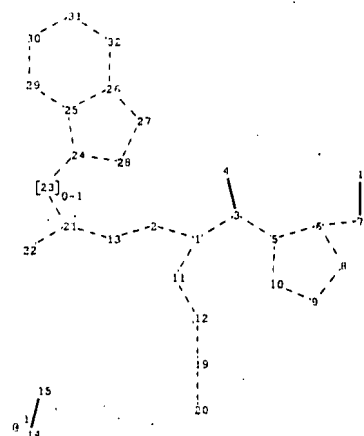
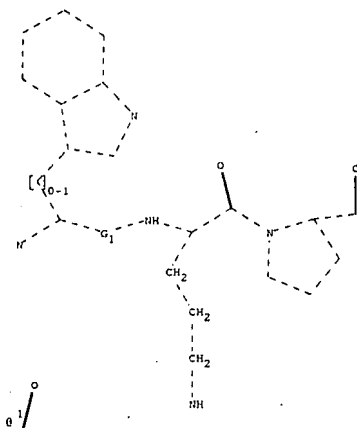
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G1:CH2, [*1]

```

Match level :
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS

```



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20 21 22 23

ring nodes :

5 6 8 9 10 24 25 26 27 28 29 30 31 32

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20 21-22 21-23 23-24

ring bonds :

5-6 5-10 6-8 8-9 9-10 24-25 24-28 25-26 25-29 26-27 26-32 27-28
29-30 30-31 31-32

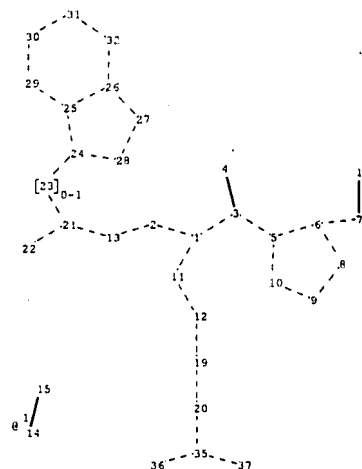
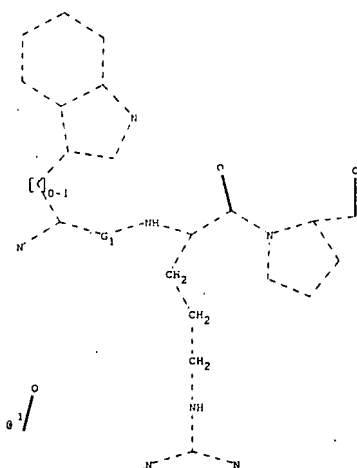
exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 21-22 21-23 23-24 24-25 24-28 25-26 25-29
26-27 26-32 27-28 29-30 30-31 31-32

G1:CH2, [*1]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom 25:Atom 26:Atom
27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20 21 22 23 35 36 37

ring nodes :

5 6 8 9 10 24 25 26 27 28 29 30 31 32

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20 20-35 21-22 21-23 23-24 35-36 35-37

ring bonds :

5-6 5-10 6-8 8-9 9-10 24-25 24-28 25-26 25-29 26-27 26-32 27-28
29-30 30-31 31-32

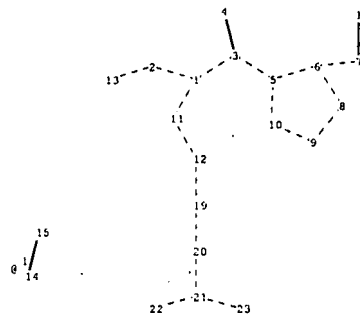
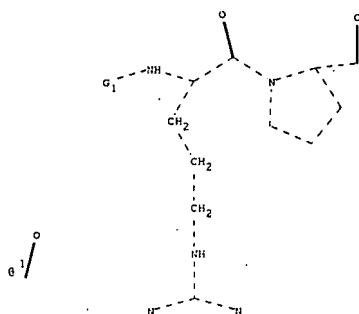
exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 20-35 21-22 21-23 23-24 24-25 24-28 25-26
25-29 26-27 26-32 27-28 29-30 30-31 31-32 35-36 35-37

G1:CH2, [*1]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom 25:Atom 26:Atom
27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom 35:CLASS 36:CLASS
37:CLASS



```

chain nodes :
  1  2  3  4  7  11  12  13  14  15  18  19  20  21  22  23
ring nodes :
  5  6  8  9  10
chain bonds :
  1-2  1-3  1-11  2-13  3-4  3-5  6-7  7-18  11-12  12-19  14-15  19-20
  20-21  21-22  21-23
ring bonds :
  5-6  5-10  6-8  8-9  9-10
exact/norm bonds :
  1-2  1-3  1-11  2-13  3-4  3-5  5-6  5-10  6-7  6-8  7-18  8-9  9-10  11-12
  12-19  14-15  19-20  20-21  21-22  21-23

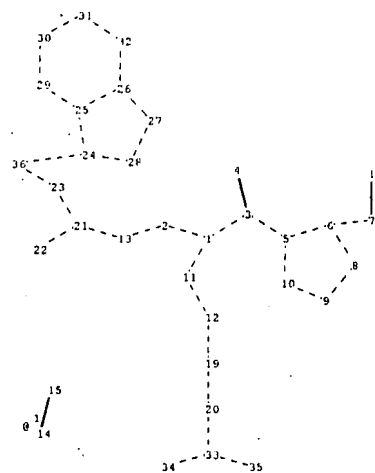
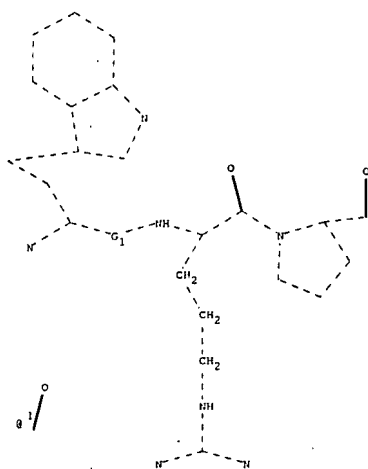
```

G1:CH2, [*1]

```

Match level :
  1:CLASS  2:CLASS  3:CLASS  4:CLASS  5:Atom  6:Atom  7:CLASS  8:Atom  9:Atom
  10:Atom  11:CLASS  12:CLASS  13:CLASS  14:CLASS  15:CLASS  18:CLASS
  19:CLASS  20:CLASS  21:CLASS  22:CLASS  23:CLASS

```



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20 21 22 23 33 34 35 36

ring nodes :

5 6 8 9 10 24 25 26 27 28 29 30 31 32

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20 20-33 21-22 21-23 23-36 24-36 33-34 33-35

ring bonds :

5-6 5-10 6-8 8-9 9-10 24-28 24-25 25-26 25-29 26-27 26-32 27-28
29-30 30-31 31-32

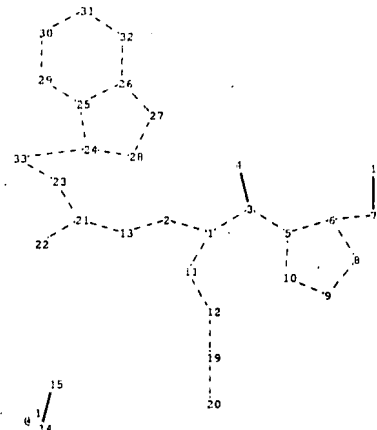
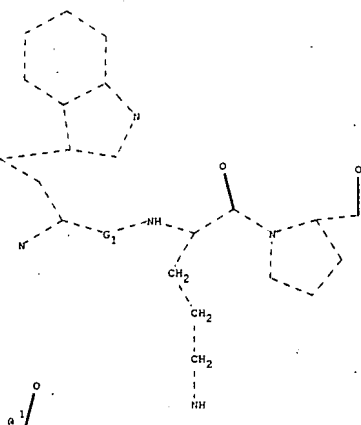
exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 20-33 21-22 21-23 23-36 24-28 24-25 24-36
25-26 25-29 26-27 26-32 27-28 29-30 30-31 31-32 33-34 33-35

G1:CH2, [*1]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom 25:Atom 26:Atom
27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom 33:CLASS 34:CLASS
35:CLASS 36:CLASS



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20 21 22 23 33

ring nodes :

5 6 8 9 10 24 25 26 27 28 29 30 31 32

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20 21-22 21-23 23-33 24-33

ring bonds :

5-6 5-10 6-8 8-9 9-10 24-28 24-25 25-26 25-29 26-27 26-32 27-28
29-30 30-31 31-32

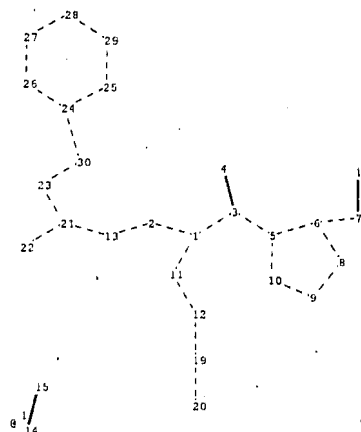
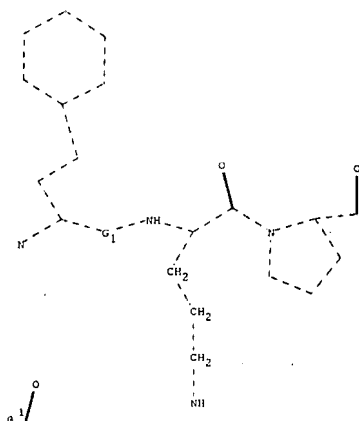
exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 21-22 21-23 23-33 24-28 24-25 24-33 25-26
25-29 26-27 26-32 27-28 29-30 30-31 31-32

G1:CH2, [*1]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom 25:Atom 26:Atom
27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom 33:CLASS



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20 21 22 23 30

ring nodes :

5 6 8 9 10 24 25 26 27 28 29

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20 21-22 21-23 23-30 24-30

ring bonds :

5-6 5-10 6-8 8-9 9-10 24-26 24-25 25-29 26-27 27-28 28-29

exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 21-22 21-23 23-30 24-26 24-25 24-30 25-29
26-27 27-28 28-29

G1:CH2, [*1]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom 25:Atom 26:Atom
27:Atom 28:Atom 29:Atom 30:CLASS

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(FILE 'HOME' ENTERED AT 16:14:46 ON 11 SEP 2007)

FILE 'REGISTRY' ENTERED AT 16:15:11 ON 11 SEP 2007

L1 STRUCTURE UPLOADED
L2 3511 SEA SSS FUL L1
L3 STRUCTURE UPLOADED
D
L4 3481 SEA SUB=L2 SSS FUL L3
L5 30 SEA ABB=ON PLU=ON L2 NOT L4
L6 ANALYZE PLU=ON L5 1- CHEM : 33 TERMS
D
L7 ANALYZE PLU=ON L5 1- LC : 6 TERMS
D

FILE 'ZCAPLUS, USPATFULL, USPATOLD, USPAT2, TOXCENTER, BEILSTEIN, CASREACT' ENTERED AT 16:18:04 ON 11 SEP 2007

L8 33 SEA ABB=ON PLU=ON L5
L9 28 DUP REM L8 (5 DUPLICATES REMOVED)
ANSWERS '1-22' FROM FILE ZCAPLUS
ANSWERS '23-27' FROM FILE USPATFULL
ANSWER '28' FROM FILE BEILSTEIN
D L9 28 IBIB

FILE 'ZCAPLUS, USPATFULL, USPATOLD, USPAT2' ENTERED AT 16:19:35 ON 11 SEP 2007

L10 27 SEA ABB=ON PLU=ON L9
L11 0 SEA ABB=ON PLU=ON L10 AND 2004-812831#/AP,PRN
L12 0 SEA ABB=ON PLU=ON L10 AND US 2004-812831#/AP,PRN
L13 0 SEA ABB=ON PLU=ON L10 AND US2004-812831#/AP,PRN
D L10 1- IBIB HITSTR

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 10 SEP 2007 HIGHEST RN 946567-47-1

DICTIONARY FILE UPDATES: 10 SEP 2007 HIGHEST RN 946567-47-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

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<http://www.cas.org/support/stngen/stndoc/properties.html>

FILE ZCAPLUS

FILE COVERS 1907 - 11 Sep 2007 VOL 147 ISS 12

FILE LAST UPDATED: 10 Sep 2007 (20070910/ED)

FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 11 Sep 2007 (20070911/PD)

FILE LAST UPDATED: 11 Sep 2007 (20070911/ED)

CA INDEXING IS CURRENT THROUGH 11 Sep 2007 (20070911/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 11 Sep 2007 (20070911/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2007

FILE USPATOLD

FILE COVERS U.S. PATENTS 1790-1975

FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 11 Sep 2007 (20070911/PD)

FILE LAST UPDATED: 11 Sep 2007 (20070911/ED)

CA INDEXING IS CURRENT THROUGH 11 Sep 2007 (20070911/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 11 Sep 2007 (20070911/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2007

FILE TOXCENTER

FILE COVERS 1907 TO 11 Sep 2007 (20070911/ED)

FILE BEILSTEIN

FILE LAST UPDATED ON June 25, 2007

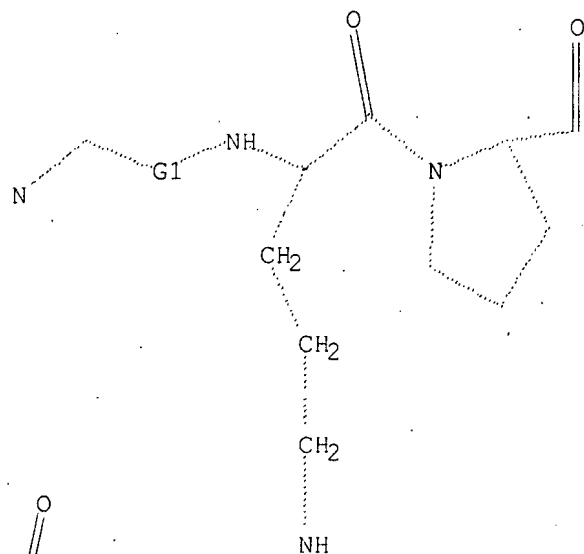
FILE COVERS 1771 TO 2007.

FILE CASREACT

FILE CONTENT:1840 - 8 Sep 2007 VOL 147 ISS 12

> d que sta
L1

STR

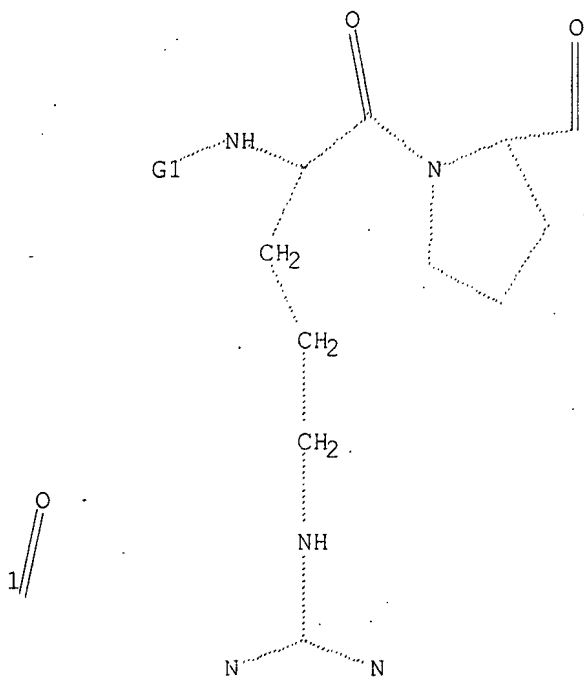


G1 CH2, [01]

Structure attributes must be viewed using STN Express query preparation.

L2 3511 SEA FILE=REGISTRY SSS FUL L1

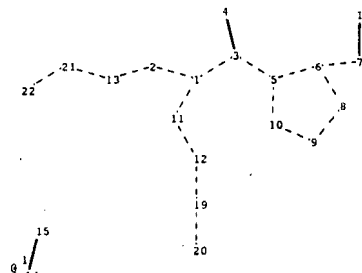
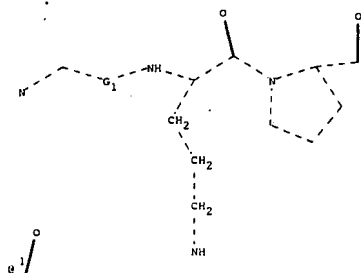
L3 STR



G1 CH2, [01]

Structure attributes must be viewed using STN Express query preparation.

| | | | | | | | |
|-----|------|-----|---------------|--------|----------------|------------|----------|
| L4 | 3481 | SEA | FILE=REGISTRY | SUB=L2 | SSS | FUL | L3 |
| L5 | 30 | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L2 | NOT L4 |
| L8 | 33 | SEA | L5 | | | | |
| L9 | 28 | DUP | REM | L8 | (5 | DUPLICATES | REMOVED) |
| L10 | 27 | SEA | L9 | | | | |
| L13 | 0 | SEA | L10 | AND | US2004-812831# | /AP,PRN | |



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20

ring nodes :

5 6 8 9 10 22

ring/chain nodes :

21

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20

ring/chain bonds :

21-22

ring bonds :

5-6 5-10 6-8 8-9 9-10

exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 21-22

G1:CH2, [*1]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:Atom

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(FILE 'HOME' ENTERED AT 16:45:27 ON 11 SEP 2007)

FILE 'REGISTRY' ENTERED AT 16:45:32 ON 11 SEP 2007

L1 STRUCTURE UPLOADED
 D
L2 0 SEA SSS SAM L1
L3 25 SEA SSS FUL L1
L4 ANALYZE PLU=ON L3 1- LC : 6 TERMS
 D

FILE 'ZCAPLUS, USPATFULL, USPATOLD, USPAT2, CASREACT, TOXCENTER, MEDLINE'
ENTERED AT 16:46:23 ON 11 SEP 2007

L5 16 SEA ABB=ON PLU=ON L3
L6 13 DUP REM L5 (3 DUPLICATES REMOVED)
 ANSWERS '1-12' FROM FILE ZCAPLUS
 ANSWER '13' FROM FILE USPATFULL

FILE 'ZCAPLUS, USPATFULL' ENTERED AT 16:46:50 ON 11 SEP 2007

L7 13 SEA ABB=ON PLU=ON L6
 D L7 1-13 IBIB HITSTR

FILE 'HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 10 SEP 2007 HIGHEST RN 946567-47-1

DICTIONARY FILE UPDATES: 10 SEP 2007 HIGHEST RN 946567-47-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

Please note that search-term pricing does apply when
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FILE ZCAPLUS

FILE COVERS 1907 - 11 Sep 2007 VOL 147 ISS 12

FILE LAST UPDATED: 10 Sep 2007 (20070910/ED)

FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 11 Sep 2007 (20070911/PD)

FILE LAST UPDATED: 11 Sep 2007 (20070911/ED)

CA INDEXING IS CURRENT THROUGH 11 Sep 2007 (20070911/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 11 Sep 2007 (20070911/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2007

FILE USPATOLD

FILE COVERS U.S. PATENTS 1790-1975

FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 11 Sep 2007 (20070911/PD)

FILE LAST UPDATED: 11 Sep 2007 (20070911/ED)

CA INDEXING IS CURRENT THROUGH 11 Sep 2007 (20070911/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 11 Sep 2007 (20070911/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2007

FILE CASREACT

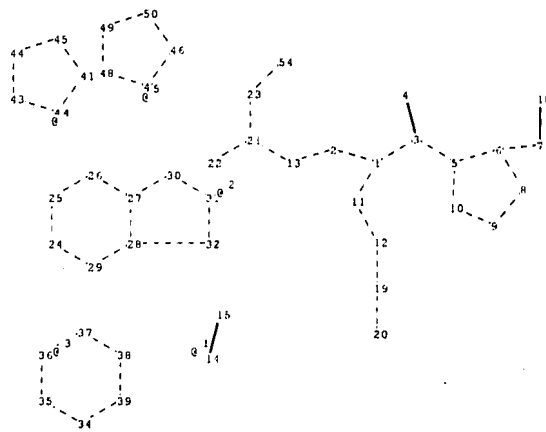
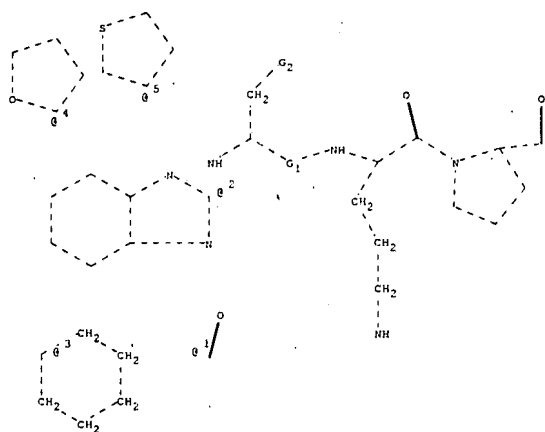
FILE CONTENT:1840 - 8 Sep 2007 VOL 147 ISS 12

FILE TOXCENTER

FILE COVERS 1907 TO 11 Sep 2007 (20070911/ED)

FILE MEDLINE

FILE LAST UPDATED: 8 Sep 2007 (20070908/UP). FILE COVERS 1950 TO DATE.



chain nodes :

1 2 3 4 7 11 12 13 14 15 18 19 20 21 22 23 54

ring nodes :

5 6 8 9 10 24 25 26 27 28 29 30 31 32 34 35 36 37 38 39
41 42 43 44 45 46 47 48 49 50

chain bonds :

1-2 1-3 1-11 2-13 3-4 3-5 6-7 7-18 11-12 12-19 13-21 14-15
19-20 21-22 21-23 23-54

ring bonds :

5-6 5-10 6-8 8-9 9-10 24-25 24-29 25-26 26-27 27-28 27-30 28-29
28-32 30-31 31-32 34-35 34-39 35-36 36-37 37-38 38-39 41-42 41-45
42-43 43-44 44-45 46-47 46-50 47-48 48-49 49-50

exact/norm bonds :

1-2 1-3 1-11 2-13 3-4 3-5 5-6 5-10 6-7 6-8 7-18 8-9 9-10 11-12
12-19 13-21 14-15 19-20 21-22 21-23 23-54 24-25 24-29 25-26 26-27
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38-39 41-42 41-45 42-43 43-44 44-45 46-47 46-50 47-48 48-49 49-50

G1:CH2,[*1]

G2:[*2],[*3],[*4],[*5]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:Atom 25:Atom 26:Atom
27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom 34:Atom 35:Atom
36:Atom 37:Atom 38:Atom 39:Atom 41:Atom 42:Atom 43:Atom 44:Atom
45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 54:CLASS